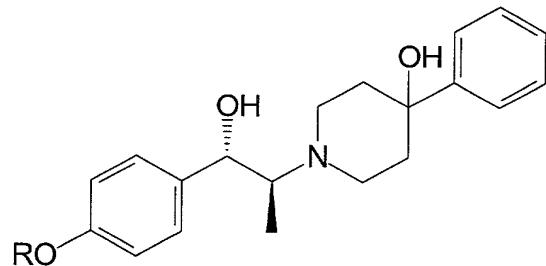


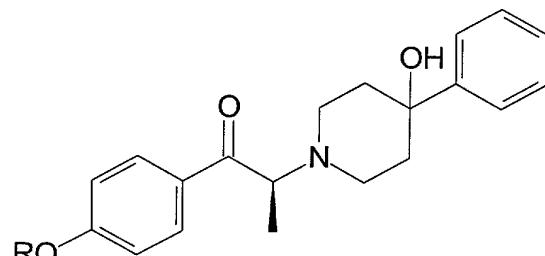
CLAIMS:

1 1. A process for the preparation of a nonracemic diastereomer selected
2 from 1-(4-hydroxy-phenyl)-2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1-propanol compounds of
3 the structural formula I and stereoisomers thereof,



I

4 5 wherein R is selected from hydrogen and hydroxyl protecting groups, comprising
6 hydrogenating a corresponding nonracemic ketone selected from 1-(4-hydroxy-phenyl)-2-(4-
7 hydroxy-4-phenyl-piperidin-1-yl)-1-propanone compounds of the structural formula II and
8 enantiomers thereof,



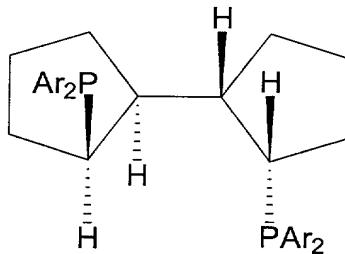
II

10 11 12 13 14 15 16 17 18 19

10 11 12 13 14 15 16 17 18 19
in the presence of a catalyst system comprising ruthenium, a nonracemic diphosphine ligand,
a bidentate amine ligand selected from amino-thioethers and achiral diamines, and a base.

1 2 3 4 5 6 7 8 9
2 3 4 5 6 7 8 9
2. The process of claim 1 wherein the nonracemic diphosphine ligand
comprises a 2,2'-bis(diorganophosphino)-1,1'-bis(cyclic) structure.

1 2 3 4 5 6 7 8 9
2 3 4 5 6 7 8 9
3. The process of claim 2 wherein the nonracemic diphosphine ligand is
selected from enantiomers of diphosphine ligands having the structural formula



3

4 wherein Ar is an aryl group.

1 4. The process of claim 3 wherein Ar is phenyl.

1 5. The process of claim 1 wherein the bidentate amine ligand is an amino-
2 thioether.

1 6. The process of claim 5 wherein the amino-thioether is a
2 2-(alkylthio)aniline.

1 7. The process of claim 6 wherein the 2-(alkylthio)aniline is selected
2 from 2-(methylthio)aniline and 2-(ethylthio)aniline.

1 8. The process of claim 1 wherein the bidentate amine ligand is an achiral
2 diamine.

1 9. The process of claim 8 wherein the achiral diamine comprises no chiral
2 carbon centers.

1 10. The process of claim 8 wherein the achiral diamine is a 1,2-phenylene-
2 diamine.

1 11. The process of claim 1 wherein the base is selected from basic
2 inorganic and organic salts, alkylguanidines, aminophosphazenes, and proazaphosphatrane.

1 12. The process of claim 11 wherein the base is selected from
2 alkylguanidines, aminophosphazenes, and proazaphosphatrane.

1 13. The process of claim 12 wherein the base is an alkylguanidine.

1 14. The process of claim 13 wherein the base is a pentaalkylguanidine.

1 15. The process of claim 1 wherein the hydroxyl protecting group is
2 benzyl.

1 16. The process of claim 15 wherein the diastereomer is a *syn*-
2 diastereomer.

1 17. The process of claim 16 wherein the *syn*-diastereomer is the (1*S*,2*S*)
2 diastereomer.

1 **18.** The process of claim **16** wherein the *syn*-diastereomer is formed in at
2 least about 90% diastereomeric excess.

1 **19.** A process for the preparation of (1*S*,2*S*)-1-(4-benzoxy-phenyl)-2-(4-
2 hydroxy-4-phenyl-piperidin-1-yl)-1- by catalytic hydrogenation of (2*S*)-1-(4-benzyl-phenyl)-
3 2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1-propanone using a catalyst system comprising
4 ruthenium, a (*S,S,S,S*)-2,2'-bis-(diarylphosphino)-1,1'-dicyclopentane ligand, a 1,2-phenylene
5 diamine ligand, and a base.

1 **20.** A process for the preparation of (1*S*,2*S*)-1-(4-benzoxy-phenyl)-2-(4-
2 hydroxy-4-phenyl-piperidin-1-yl)-1- by catalytic hydrogenation of (2*S*)-1-(4-benzyl-phenyl)-
3 2-(4-hydroxy-4-phenyl-piperidin-1-yl)-1-propanone using a catalyst system comprising
4 ruthenium, a (*S,S,S,S*)-2,2'-bis-(diarylphosphino)-1,1'-dicyclopentane ligand, a
5 2-(alkylthio)aniline ligand, and a base.